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(54) Title: DISEASE PREVENTION AND VACCINATION PRIOR TO THYMIC REACTIVATIONS

(57) Abstract: The present disclosure provides methods for preventing or treating illness, improving responsiveness to immunization, and improving the efficacy of gene therapy in patient by disrupting sex steroid signaling in the patient, wherein the bone marrow and other immune cell functionality is improved without, prior to, or currently with, thymic regeneration. In some embodiments, sex steroid signaling is interrupted or ablated in the patient by the administration of LHRH agonists, LHRH antagonists, anti-LHRH receptor antibodies, anti-LHRH vaccines, anti-androgens, anti-estrogens, selective estrogen receptor modulators (SERMs), selective androgen receptor modulators (SARMs), selective progesterone response modulators (SPRMs), ERDs, aromatase inhibitors, or various combinations thereof.

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